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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/874,960  | 06/07/2001  | Ju Chun Yeo          | 049128-5013         | 5946             |
| 9629  | 7590        | 08/20/2004           | EXAMINER            |                  |
| MORGAN LEWIS & BOCKIUS LLP<br>1111 PENNSYLVANIA AVENUE NW<br>WASHINGTON, DC 20004 |             |                      | NGUYEN, JENNIFER T  |                  |
|   |             | ART UNIT             |                     | PAPER NUMBER     |
|   |             | 2674                 |                     | 9                |

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |              |
|------------------------------|-----------------|--------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s) |
|                              | 09/874,960      | YEO ET AL.   |
| Examiner                     | Art Unit        |              |
| Jennifer T Nguyen            | 2674            |              |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 June 2001.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-19 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 16-19 is/are allowed.  
 6) Claim(s) 1,2,7,8,11,12 and 15 is/are rejected.  
 7) Claim(s) 3,6,9,10,13, and 14 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
     Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
     Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

1. This Office action is responsive to amendment filed on 06/01/2004.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Masumori et al. (U.S. Patent No. 5,168,270).

Regarding claim 1, referring to Figs. 2 and 7-9, Masumori teaches a method of driving a liquid crystal display (30) including a plurality of data lines, a data driver for driving the data lines, and a plurality of demultiplexors (i.e., source driver division 13-1 to 13-s) arranged between the data lines and the data driver to apply a data supplied from the data driver to a desired number of data lines (col. 5, lines 40-50), said method comprising the steps of: supplying said data to the desired number of data lines on a basis of first sequence (i.e., R1, G1, B2) (Fig. 8B) in a first horizontal period; and supplying said data to the desired number of data lines on a basis of second sequence (i.e., B1, R2, G2) (Fig. 8B) in a second horizontal period following the first horizontal period wherein the second sequence differs from the first sequence (from col. 8, line 40 to col. 9, line 2).

Regarding claim 2, Masumori further teaches the data is sequentially supplied to the desired number of data lines in the first horizontal period (from col. 4, line 40 to col. 5, line 50).

Regarding claim 4, Masumori further teaches a scanning signal is applied to any one of a plurality of gate lines arranged in a direction crossing the data lines in said horizontal period (col. 6, lines 33-66).

Regarding claim 5, Masumori also teaches that each of the demultiplexors (13-1 to 13-s) includes a desired number of switching devices, which are sequentially supplied with a control signal in said first horizontal period (from col. 5, line 51 to col. 6, line 5).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 8, 11, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masumori et al. (U.S. Patent No. 5,168,270) in view of prior art Figs. 1-3.

Regarding claim 7, Masumori teaches a method of driving a liquid crystal display (30) including a plurality of data lines, a data driver for driving the data lines, and a plurality of demultiplexors (i.e., source driver division 13-1 to 13-s) arranged between the data lines and the data driver to apply a data supplied from the data driver to a desired number of data lines (col. 5, lines 40-50), said method comprising the steps of: supplying said data to the desired number of data lines on a basis and supplying said data to the desired number of data lines on a basis of a first sequence and a second sequence wherein the second sequence differs from the first sequence (from col. 8, line 40 to col. 9, line 2).

Masumori differs from claim 7 in that he does not specifically teach the first sequence in the  $(4i+1)$  th and  $(4i+4)$  th frames (wherein  $i$  is an integer) and the second sequence in the  $(4i+2)$  th and  $(4i+3)$  frame. However, the prior art Figs. 1-3 teaches the first sequence in the  $(4i+1)$  th and  $(4i+4)$  th frames (wherein  $i$  is an integer) and the second sequence in the  $(4i+2)$  th and  $(4i+3)$  frame (see specification pages 2 and 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the first sequence and the second sequence as taught by the prior art Figs. 1-3 in the system of Masumori in order to improve a picture quality.

Regarding claims 8 and 11, the combination of Masumori and prior art figs. 1-3 teaches the data is sequentially supplied to the desired number of data lines in the  $(4i+1)$  th and  $(4i+4)$  th frames and in the  $(4i+2)$  th and  $(4i+3)$  frame (see specification pages 2 and 3 for the prior art figs. 1-3).

Regarding claims 12 and 15, the combination of Masumori and prior art figs. 1-3 teaches each of the demultiplexors (DEMUX1-DEMUXk) includes a desired number of switching devices (CS1-CS4), which are sequentially supplied with a control signal  $(4i+1)$  th and  $(4i+4)$  th frames and in the  $(4i+2)$  th and  $(4i+3)$  frame (see specification pages 2 and 3 for the prior art figs. 1-3).

6. Claims 1, 2, 4, 5, 7, 8, 11, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ha (U.S. Patent No. 6,333,729) in view of Masumori et al. (U.S. Patent No. 5,168,270).

**The applied reference has a common assignee with the instant application.** Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35

U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). **For applications filed on or after November 29, 1999**, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claims 1 and 7, referring to Fig. 2, Ha teaches a method of driving a liquid crystal display including a plurality of data lines (DL1-DL2400), a data driver (24a, 24b) for driving the data lines (DL1-DL2400), and a plurality of demultiplexors (DEMUX1-DEMUX600) arranged between the data lines (DL1-DL2400) and the data driver (24a, 24b) to apply a data supplied from the data driver (24a, 24b) to a desired number of data lines (DL1-DL2400), said method comprising the steps of: supplying said data to the desired number of data lines (DL1-DL2400) on a basis of first sequence in a first horizontal period; and supplying said data to the desired number of data lines (DL1-DL2400) on a basis of second sequence in a

second horizontal period following the first horizontal period (col. 2, lines 12-55, col. 3, lines 11-67 and col. 4, lines 1-7).

Ha differs from claims 1 and 7 in that he does not specifically teach the second sequence differs from the first sequence. However, referring to Figs. 2 and 8B, Masumori teaches the second sequence differs from the first sequence (from col. 8, line 40 to col. 9, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the second sequence differs from the first sequence as taught by Masumori in the system of Ha in order to improve a picture quality.

Regarding claims 2 and 8, Ha further teaches the data is sequentially supplied to the desired number of data lines (DL1-DL2400) in the first horizontal period (Fig. 2, col. 2, lines 12-55, col. 3, lines 11-67 and col. 4, lines 1-7).

Regarding claims 4 and 11, Ha further teaches a scanning signal is applied to any one of a plurality of gate lines (GM1-GM600) arranged in a direction crossing the data lines (DL1-DL2400) in said horizontal period.

Regarding claims 5, 12 and 15, Ha also teaches that each of the demultiplexors (DEMUX1-DEMUX600) includes a desired number of switching devices (MN1-MN4), which are sequentially supplied with a control signal in said first horizontal period (col. 3, lines 42-67).

7. Claims 3, 6, 9, 10, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 16-19 are allowed.

9. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reached at **703-305-4709**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, DC. 20231

**Or faxed to: 703-872-9306 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

JNguyen  
08/12/2004

  
REGINA LIANG  
PRIMARY EXAMINER